DOCUMENT RESUME

ED 363 362 JC 930 485

AUTHOR Chu, Lap Tak
TITLE Who Are the Model Minorities among the Junior College Asian-American Subgroups?
PUB DATE 91
NOTE 82p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Academic Achievement; *Asian Americans; Chinese Americans; College Outcomes Assessment; Community Colleges; Filipino Americans; Japanese Americans; Korean Americans; *Minority Groups; Outcomes of Education; Two Year Colleges; *Two Year College Students
IDENTIFIERS Asian American Students; Los Angeles Community College District CA

ABSTRACT

The purpose of the study reported here was to test the myth that Asian-American students are a "model minority," who consistently outperform Blacks, Hispanics, American Indians, Alaskan Natives, and other minorities. Using 1989 data on students attending the nine colleges in the Los Angeles Community College District (LACCD), the study analyzed academic achievement by the following measures: ethnicity, including Chinese-, Japanese-, Korean-, Filipino-, and Vietnamese-American subgroups; marital status; age; gender; residence history; pre-college academic preparation; social class; employment status; scholarships; student aspirations; educational plans; academic involvement; and student major. Study findings included the following: (1) marital status, age, academic involvement, and change in major field of study affected academic achievement across all ethnic groups; (2) the mean grade point average (GPA) for White LACCD students was 1.86, while the Asian-American aggregate was 1.76; (3) Korean-Americans had the highest GPA among all Asian-American subgroups (2.02), followed by Chinese-Americans (1.83) and Vietnamese-Americans (1.73); (4) native-English speaking Whites and Japanese-Americans had the largest proportion of respondents with GPA's of 2.99 or below; (5) Filipino- and Korean-Americans had the largest percentage of students eligible to enter the University of California or California State University systems after high school graduation, and Japanese-Americans had the least; and (6) the level of acculturation may have an impact on student performance. A review of the literature on the academic performance of minorities is included. Contains 81 references. (MAB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 363 362

WHO ARE THE MODEL MINORITIES AMONG THE JUNIOR COLLEGE ASIAN-AMERICAN SUBGROUPS?

Submitted
by

Lap Tak Chu

JC 930 485

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

L.T. Chu

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Table of Contents

Introduction 1
Critical Research Questions 2
Academic Achievement of Minorities: Some Theoretical Explanations 3
Related Literature on Asian American Academic Achievement ...7
Rationale for Independent Variables 20
    Demographic & Background Characteristics 20
    Academic Variables 22
    Control Variables 26
Research Hypothesis 26
Analysis 29
Limitations & Delimitation of the Study 30
Summary of Major Findings 34
    Implications & Suggestions 64
Appendix 68
Footnotes 70
Bibliography 72

Introduction

Past research studies and literature often provide the following reasons for explaining the high and the low academic performance of minorities. They are: (a) Genetic explanation (b) Cultural Deprivation (c) Cultural Discontinuities (d) "Low-Income and Status" explanation (e) "Response to Low Status" explanation (f) "Relative Functionalist" explanation and (g) "Pre-College predictors" explanation. Even though some of the explanations above do provide some hints for the understanding of the under achievement or over performance of some minorities as a whole, explanation(s) for the success of the stereotyped Asian-Americans alone still need(s) further exploration. As a matter of fact, some of these explanations have been refuted or proved invalid and needed reexamination or testified.

The purpose of this study is to test the myth of the umbrella term "model Asian minority." The main thrust is to show that this term can not be applied to all Asian-American ethnic subgroups (Chinese, Japanese, Koreans, Filipinos, Vietnamese or Southeast Asians.) Moreover, this research study also illustrates that certain combination of variables are able to distinguish the high-achievers from the average-achievers and the low-achievers among the Asian aggregate and the Whites.

Critical Research Questions

(1) Do the demographic, background and academic characteristics related to academic achievement differ by ethnicity?

(2) Do the low-, the average- and the high-achievers differ significantly with respect to the demographic, background and academic characteristics?

(3) Can all Asian-Americans be covered under one umbrella term as "model minority"---if judged purely on an academic basis? Who can and who cannot? Is it a myth or a reality?

(4) What combination of variables (demographic, background and academic characteristics) discriminate against who are the high-achievers, the average-achievers and the low-achievers?

(5) Does the set of discriminating variables vary by race: the majority Whites and the minority Asian aggregate?

There is without a doubt that Asian-Americans as an aggregate seem to stand out as a "successful" ethnic group when compared to other minorities like Black, Hispanic, American Indian or Alaskan Native. Nonetheless, this myth does not necessarily true for all Asian-American subgroups.

Academic Achievement of Minorities: Some Theoretical Explanations

With regard to the explanations of academic achievement among different minorities in general, there are at least six theoretical explanations. The first explanation deals directly with "heredity," that is, a certain minority group is innately superior in intelligence than others (Jensen, 1969; Sowell, 1978; Lynn, 1977; Vernon, 1982). The second explanation is related to the "Cultural Deficit" or "Cultural Deprivation" hypothesis, which postulates that poor children perform poorly in school because they are deprived of the stimulation of a home that emphasizes learning and a school curriculum that lack in content and style of learning. (Bloom, Davis, Hess 1965; Coleman, 1966; Goldberg and Tannenbaum, 1967; Philips, 1976). The third explanation is concerned with "Cultural Discontinuities" (Ogbu, 1978; Trueba, 1983, 1987, 1989:146; Erickson, 1982) which hypothesizes that the major differences in school experience are the difference or discontinuity in the cultural background of individuals and the culture of the school. The differences in academic success are often a repercussion of their "culturally- or psychologically-determined boundaries" and their responses to the oppressive "societal forces." Therefore, the more euphonious the school culture and one's cultural background, the better the performance and the faster the integration into the host culture. In fact, this hypothesis also alludes the

importance of the cultural value which is prevalent in a group (Godeon, 1964; Sue & Kitano 1973; Yamagata-Noji, 1987; Monzon, 1984.) The fourth explanation refers to the "Low Income and Status" hypothesis, which assumes that the social position and the economic well-being of an individual or family will affect not only the knowledge and the experience of children but also the way they are treated in the public institutions (Cummins, 1986; Cheng, 1987; Clark, 1983; Trueba, 1987a, b; Heath, 1983). This explanation can be conceived as a test of the "cultural Deprivation" hypothesis. They are similar in the sense that both indicate that a person's social position or status within a society determines the availability of public funding. The fifth explanation refers to the "Minorities' Response to Low Status" hypothesis. It refers to the collective responses of the status ascribed to some minorities which rationalize or explain the existing social order and their subordinate positions under a rigid stratified society. This explanation untangles myths of why some minorities succeed or fail in a capitalist society (Bowles & Ginitis, 1977; Giroux, 1983; Willis, 1977; Ogbu & Matute-Bianchi 1986:87 & 93). This Neo-Marxist approach attempts to explain the social inequality and injustice within the society by an unequal distribution of power and authority among groups. Those people who have power or authority would try every measure, such as education, to legitimize and maintain the existing social order. The sixth explanation can be

comprehended as a combination of some of the explanations above. It is called the "Relative Functionalist" hypothesis which states that unique cultural value can not be considered as the sole factor that contributes to the academic achievement of some minorities, there must be some mediating factors such as the minority's status in the society that makes this final product (academic failure or success) inevitable. It hypothesizes that the narrower the non-educational avenue for social mobility, the greater the dependence of an individual on the educational route for upward mobility which is especially true among Asian-Americans (Sue, Feb. 1990:16 in press.) The last explanation of minority achievement is the "Pre-College Predictors" hypothesis, it proposes that high school achievement and performance are good predictors of college achievement. High school records and pre-college achievement or admission tests are often used for this purpose (Passons, 1967; Goldman & Richards, 1974; Chissom & Lanier, 1975; Aleamoni & others, 1978; Astin, 1971, 1982; Blustein & others, 1986; Doran, 1987; Larson & Scontrino; Mcdonald Gawkoski; Weitzman, 1982; Sue & Abe, 1988.)

However, many of these achievement explanations above have been proved either deficient or wanting evidence. For example, the "Genetic" explanation has been refuted for lacking empirical evidence (Ogbu, 1978; Roosens, 1987; Sue, 1990) and so has the "Cultural Deprivation" (Shultz &

Erickson, 1982; Ogbu, 1978) or cultural values hypothesis (Hirschman & Wong, 1986; Ogbu & Matute-Bianchi, 1986; Steinberg, 1981; Sue, 1990:17.) Furthermore, the "Cultural Discontinuities" hypothesis is criticized for wanting empirical supports (Trueba, 1989:147-148; Erickson, 1984, 1986) and so has the "Relative Functionalism" which demands further investigation and testing. The "Pre-College Predictors" hypothesis remains controversial (Crouse & Trusheim, 1988; McCornack & Mcleod, 1983; Mccornack, 1983; Nader & Nairn, 1980; Doran, 1987). Since no single explanation above addresses the Asian-Americans experience directly, all related concepts that explain the academic achievement of other minorities might not necessarily fit the Asian-Americans experience. This research study is stimulated by the need to search for a model that specifically explains the Asian-Americans experience.

Related Literature on Asian American Academic Achievement

Literature that deals directly with the academic achievement of Asian-Americans and its subcategories are very limited. Some of the representative works and related literature include: Astin, A. (1982); Bagasao (1983); Hsia, (1988); Sue & Zane (1985); Sue, 1988; Toupin and Son (1985); Blustein et als., (1986); Astin & Cross (1979); Pascarella, Duby and others (1981 and 1983); Tracey and Sedlacek (1985); and others.

In Astin's book of Minorities in American Higher Education, 1982, his major goal is to provide some vogue and current data concerning the academic progress and representation of the four minority groups (Blacks, Chicanos, Puerto Ricans and American Indians) in the American higher education. He wants to find out what additional factors influence the educational progress of these minority groups? Astin's study directs more on the reasons why these minority groups are under-represented in higher education and not on the verification of the success of the Asian-Americans in higher education. The Asian-Americans do not receive much weight in Astin's study.

In addition to Astin's study, Bagasao's dissertation on Factors Related to Science-Career-Planning Among Asian and Pacific American College-Bound High School Seniors (1983), which displays a profile of the Asian American/Pacific

Islanders (APA) who head for college. Bagasao reports that no matter the students are American born or foreign born but raised in America or recent immigrants, APA are recurrently science-oriented or quantitatively-oriented students. Her major thrust is to uncover the factors that contribute to the Science-Career-Planning of these college-bound high school seniors. She used the High School and Beyond Study data set, which was conducted by the National Center for Educational Statistics in 1980, to carry out her analysis. Bagasao's study is interesting in the sense that she tries to compare the APA aggregate and its subgroups with the Whites. Nonetheless, her interest is to identify those characteristics that distinguish between the science-career planner and non-science-career planner. In Bagasao's study, she has difficulties in comparing different Asian subgroups because of an insufficient sample size. In conclusion, she discovers that sex and residence history affect the career plans of the APAs, and verbal ability affects the career plans of the Whites.

In relation to Bagasao's research, Hsia's book, *Asian-Americans in Higher Education and Work 1988*, presents her readers with more up-to-date information and literature concerning Asian-Americans' performances in higher education and work. Data pertaining to the demographic characteristics, academic aptitude, academic ability, academic performance, undergraduate admissions, college aspiration, degree

attainment, career choice, and so forth, are reviewed in her book. However, this book is not planned to provide a comprehensive picture of why and what specific groups of Asian-Americans are doing well academically. Nonetheless, it is a very informative reference for students, teachers, school administrators, counselors and the public. The reason is that recent studies, especially "large-scale national representative" ones, on Asian-Americans achievement, ability, and aptitude Asian-Americans are inadequate.

Sue and Zane's article on "Academic Achievement and Socio-emotional Adjustment Among Chinese University Students, 1985" reports the academic performance and socio-emotional adaptation of the Chinese university students studying in the University of California, Los Angeles (UCLA). The sample includes 177 enrolled students of different class levels, majors and sex. Three groups of students are compared based on their length of residence in this country and place of birth: American Born (AB), Early Immigrants (EI); and Recent Immigrants (RI). The result shows that Chinese university students' academic performances are above the university average. Nevertheless, RI often use some sort of adaptive strategies to maintain a high college performance. Although Sue and Zane's study include: length of residence, place of birth, majors, study habits, High School Grade Point Average (HSGPA) and SAT scores in their study, the study is confined to UCLA Chinese students and no information on Asian subgroups

are collected.

Sue & Abe's study on "Predictors of Academic Achievement Among the Asian-American and the White students, 1988" is a collaborative study of the University of California (8 UC campuses) and the College Entrance Examination Board. They attempt to examine the validity of the predictor variables (HSGPA, SAT-V, SAT-M, ECT, MI, MII) in predicting academic achievement while controlling for gender and academic majors. In their study, 4,113 non-foreign born Asian-American freshmen, who are regrouped into 5 subcategories, are investigated. This study is interested in the predictor variables of academic achievement, such as: English proficiency level, socio-economic status (SES), and level of acculturation. Their generalizations, however, are circumscribed only to the more prestigious and selective UC students.

Topin & Son's paper (cited in Hsia, J., 1988) "*Preliminary Findings on Asian-Americans: The Model Minority in a Small Private East Coast College, 1985*" compares two matched groups (American born Asian American versus Non-Asian) on academic performance after controlling for several characteristics like class, gender, choice of college, parental education, type of high schools, SAT Scores, and socio-economic factors. The result indicates that even well-off native born Asian-Americans use some adaptive strategies in order to maintain an above average academic

score. Again this case study has limited predictive value.

David L. Blustein and others' article on "Identifying Predictors of Academic Performance of Community College Students" identifies two essential predictors (cognitive ability and student expectations) for college GPA. A sample of 50 students is drawn from two independent but randomly selected groups. Nearly equal numbers of students in academic difficulty are included in order to assure heterogeneous of variance in the survey, and a follow-up interview of 30 respondents is also made in order to supplement some background information concerning student performance. Blustein and others also notice that past research studies on retention and academic performance often focus on four-year institutions; seldom do they pay much attention to the two-year institution. They try to include some new predictor variables which are often overlooked by scholars when studying two-year institution. These are: career indecisiveness, learning style, student's attitude toward education, cognitive ability and many others. However, their study does not look into ethnic differences in performance, and factors that discriminate between the high-achievers, the low-achievers, and the average-achievers.

Pascarella, Duby and others' article "*The Pre-enrollment Variables and Academic Performance as Predictors of Freshman Year Persistence, Early Withdrawal, And Stopout Behavior in an Urban, Nonresidential University (1981)*" does go a little bit

further. They employ a multiple group discriminant analysis to determine the pre-enrollment characteristics and first-quarter GPA in distinguishing freshmen who belong to persisters, stopout or early withdrawal. The college grade point average (GPA) is used as an intermediate variable in this study and the dependent variable can be a withdrawal, a stopout or a persistent decision. In this study, it discovers that the addition of the college GPA to the pre-enrollment characteristics helps to distinguish the persisters from early voluntary withdrawals sharply. Before this, the nine pre-enrollment variables (perceived likelihood of joining a social fraternity, sorority, or club; being Black; perceived likelihood of failing one or more courses; perceived need for academic remedy; perceived likelihood of dropping permanently; perceived likelihood of dropping out temporarily; perceived likelihood of transferring to another college, and age) are able to distinguish the stopouts as a group and the persisters and withdrawal as another group. The important thing in this study is that the perceived likelihood of college outcomes, racial groups and age are good predictors of college persistence. However, do these variables help to predict college achievement (GPA) are worth studying? The paper is more capable of using a more sophisticated research technique (discriminant analysis) to do the analysis.

Up to this point, one can discover that past researchers are more interested in the traditional academic measures than

non-traditional indicators to investigate college performance. But Tracey and Sedlacek in their paper "The Relationship of Non-cognitive Variables to Academic Success: A Longitudinal Comparison by Race " hypothesizes that the non-cognitive dimension is more important than the traditional academic measures, such as lack of ability, or poor study habits which predict academic success (Pentages & Creedon, 1978.) They develop a Scale to test this Non-Cognitive dimension. This Scale contains seven variables which are considered closely related to academic success. These are: "a) positive self-concept, as related to future expectations b) realistic self-appraisal, especially refers to academic abilities c) understanding of and an ability to deal with racism d) preference for long-term goals over more immediate, short term needs e) availability of a strong support person f) successful leadership experience in both formal or informal settings and g) demonstrated community service before college enrollment h) academic familiarity, that is, the closeness of a student's extracurricular activities and interests relate to formal academic subjects." The goal of the study is to see how traditional and non-traditional predictors correlate with academic success beyond the first year of college. The Whites and the Blacks are compared for the year 1979 and 1980. The specific semesters for each period are: 1, 3, 6 for 1980 and 1, 3, 5, 8 for 1979. Stepwise multiple regression is used. They attempt to extend the predictive validity of the Scale to

four years. The two variables that are predictive of grades at every semester are positive self-concept and realistic self-appraisal. Other variables only appear at different points of time. In brief, the study reports that a positive global, self-concept and self-appraisal and other non-cognitive variables are likely to affect one's college grade point average (GPA.)

College persistence and achievement are often used to indicate the academic success of an individual. In Helen S. Astin & Cross's study, "Factors affecting Black Students' *Persistence in College, 1979,*" they discover that of the 69 potential predictors, 17 independent variables enter the regression equation with a statistically significant weight, the most significant "positive" predictors of full-time persisters' are: past academic achievements as measured by high school grade point average, SAT Scores, enrolled in the college preparatory curriculum in high school, and attempting to attend a four-year institution. Some of the significant negative predictors are: being employed 21 or more hours per week while attending college, and parental income. In this study, those Blacks who come mainly from low-income families, and who are more likely to get financial aid, will continue to stay in college because this is their only hope. Usually the financial aids that the Whites and the Blacks received differ little in the two-year college. The Whites usually get one type of aid (either grants or loans) while the Blacks are more

likely to get a "package" combining grant, loan and work study aid. It is found that unless the grant is a large portion of the black student's financial aid package, the effect may be negative to the recipient's persistence in college. In other words, the larger loan does not promise college persistence of low-income minority groups, because they may not feel confident in paying all this money back. In such a case, "they either leave or take up more hours of part-time work which may make their course works harder." Finally, in their study, the type of institution a black student attends also proves important. The black students with approximately the same input characteristics, like academic achievement, freshmen expectations, hours of work while in college are likely to persist full-time in college if they attend predominately White ones. Judging from the above findings, it is very interesting to know whether these predictor variables (like paid hours work per week, high school GPA, institution type, high school track, college aspiration, and the rest) influence college GPA when applied to community college students.

One classic model which relates to student retention and performance is Tinto's retention model. Tinto's conceptual scheme (1975, 1985, 1987) on the retention and dropout---of college students has been tested by many researchers. Unlike Anderson[1], Spady, and Rootman, Tinto's attrition proposition has been accepted as a more empirical oriented model. His

model can be seen as an extension of Spady and Rootman's model. Tinto's model takes its root in Emile Durkheim's theory of suicide. As a sociologist, Durkheim contends that when people are sufficiently integrated to the fabric of society, especially in terms of morale and affiliation, suicide rate will decrease. Tinto also borrows from the field of economic of education which concerns the cost-benefit analysis of individual decision regarding investment in alternative educational activities. Central to Tinto's model is interaction between students and faculties in the formal academic and informal social settings. The frequency and quality of those interactions are important to modify a student's college completion goals and commitment to institutions. If the student-staff relation remains strong and outweighs alternatives to college, retention will occur. If not, a decision will be made to withdraw. In his article (1985), he also tries to distinguish academic dismissal from voluntary withdrawal from college. According to Tinto, a college often contains both the academic system and the social system. A person may be able to integrate in one area but not the other. One can be integrated into the social sphere of the college and still dropout because of an insufficient academic performance, or one may be good in academic performance but finally dropout because of an inadequate integration into the social life of the institution. The interplay between these two relations is often very

intricated. In the case of the Asian-Americans, little is known how much the first of the two constructs of Tinto's conceptual scheme influence academic achievement, which forms a small part of the third construct. Students' background characteristics (that is, family background, pre-college schooling, individual attributes) and initial commitments (that is, commitment to the goal of college graduation and commitment to the institution) are the first two constructs. Pascarella and Others (1983) have conducted a similar study in a community college setting in order to test Tinto's model, but again it is not an examination of the Asian-Americans, and the non-white sample that they used is very small.

As mentioned above, Pascarella, Duby and others' article "*A Test And Reconceptualization of a Theoretical Model of College Withdrawal in a Commuter Institution Setting (1983)*" attempts to test Tinto's model and examining its applicability to Non-residential institutions. The concept of social integration and institutional commitment seem not to work in this urban commuter institution. The basic argument is that commuter students have fewer opportunities to interact with faculties and student peers. Therefore, unlike the traditional residential students, the environmental factors play a minor role in the withdrawal or persistence decision. On the other hand, the pre-enrollment student characteristics become more important in affecting the withdrawal decision of a commuter student. This study provides one with some guidelines of how

to predict the college persistence of commuter students. As indicated by Astin (1973), and Chickering (1974), students who commute to school or attend a non-residential college usually have very different input characteristics than students who reside on campus. Chickering concludes that commuting and residential students differ at least on three dimensions: " a) commuter students are less dispose to or engage in educationally and intellectually developmental activities or experiences; b) they are less likely to participate in non-compulsory social, cultural and intellectual activities; and are less likely to interact with faculty members and other students; c) and as a result, they are also less likely to be influenced by their college experience as measured in terms of degree aspirations, commitment to long term goals, and perceived competence and ability (Pascarella and others, 1983:330.) In fact, this is also interesting to see how these variables such as, degree aspiration and commitment to long term goals change over time among different Asian subgroups who study in a community college setting.

Pascarella and Chapman in another article, "A *Multi-Institutional, Path Analytic Validation of Tinto's Theoretical Model of College Withdrawal,*" continue to point out that Tinto's model to a large extent assumes that the college environment provides ample opportunities for social interaction. This is more likely in a traditional residential institution, but it is with hesitation to say that this also

holds in a non-residential setting. As we realize that students who attend community college are often older, full-time worker, more practically-oriented, and have a longer completion period. They have a higher affiliation expectation and an expectation for more major specific programs or curricula, especially for higher-achieving and intellectually-oriented students (Pascarella and others, 1983:97.) Therefore, these initial differences may have more direct effects on college performance and persistence than the college experience or impact on commuter students and students who attend a non-residential college.

In brief, as for community colleges in California or else where around the nation, they are accepted for their openness, large size, variety of courses, heterogeneous population and less selectivity; they are inclined to attract a population of all ages and of all concerns. Past research studies have focused on either traditional or non-traditional measures in predicting student outcomes. However, many of these findings are tentative and lacking concern for Asian-American experience.

Rationale for Independent Variables

Demographic and Background Characteristics

In Tinto's conceptual scheme of attrition, background characteristics are usually considered to have secondary effects on college persistence than the social integration and academic integration constructs. Nevertheless, in Pascarella and others' findings (1981, 1983), pre-college enrollment characteristics are found to have a more immediate effect on college persistence among "commuting" students. To Tinto (1987), as well as to Pascarella (1983) and Astin (1970a, 1970b, 1977, 1982), what students bring with them to college (or the input characteristics) help to facilitate their accomplishments in college. In other words, the pre-enrollment academic preparation, high school track bearing and personal ability (HSGPA) are often considered to be good predictors of college performance. For instance, Helen S. Astin mentions that enrollment in the college-preparatory track is positively correlated to college performance. Alexander Astin, on the other hand, also reports that input characteristics must be controlled in order to study the college impact on outcome variables. In Sue & Abe's study, HSGPA continues to be the best positive predictor among all predictor variables.

Residence history of the student can be used to reflect the level of acculturation in this country and this is frequently measured in terms of the number of years resided in this united nation. Sue (1990) points out that in the case of Asian-Americans, education is the only sphere which they perceive little limitation in social opportunities. A strong educational background presumably helps them to broaden their non-educational arena, and so they are more willing to put more effort on educational perseverance. Conversely, this idea postulates that the longer the length of acculturation, the lower the reliance on academic achievement. A person will perceive more open opportunities in other non-educational avenues the longer he/she "acculturate, integrate and assimilate" into this country. The person knows where to proceed and search for opportunities other than the educational one.

As for socio-economic status, it is often considered to be an important background variable by many sociologists, psychologists and educationists. Lareau (1987) says that the uneven possession of "cultural capital" within each social class creates a difference in school performance. But in Astin's (1973b) study of factors related to college attrition, family income is not a direct cause of attrition. However, in Astin's study on minorities in higher education (1982:94), he shows that parental income and education have significant positive relationships with undergraduate GPA and persistence,

especially among Chicanos, Puerto Ricans, and Blacks. The lower the parental income, the lower the minority's persistence in higher education.

Academic Variables

Paid Hours Work Per Week: Cross & Astin (1979) believe that working during semester has a "negative" effect on college performance and persistence. The longer the hours one works during the semester, the more likely one is to withdraw. For working prevents one to concentrate on study.

Fellowships, Grants, Scholarships Awarded: Astin and Cross (1979) also review that a larger loan does not ensure college persistence for low income minority groups, because they may not feel confident of paying all these money back. In this case, they will prefer to leave or take up more hours of part-time work which may make their course works even harder. In the case of community college students, I expect that grants or scholarships awarded do help minorities consolidate their studies and complement their school performance.

Initial Goal Commitment (Student Aspirations): Astin says that minorities' initial goal commitment is imminently related to their actual degree commitment. A students' initial choice of a major or a career is nothing random. This has a long term effect on a student's career development, undergraduate GPA and persistence. Tinto and Pascarella also

hold similar arguments. However, little is known when it pertains to Asian-Americans who study in community colleges. As mentioned previously by Pascarella et als. (1983), students attending community college are more mature, and program-oriented. Many of them are working mainly full-time. They attend college either for the purpose of picking up some new skills or accumulating credentials for promotion and a better salary. Since over three-quarters of this study sample is aged 24 or over, I expect that older Asian-Americans are not likely to aspire for a higher degree.

Institutional commitment: Students who have made up their decisions to stay in a particular college usually persist longer than those who do not. The reason is that they find what they want in this college, and they have positive attitudes toward their choices. This is especially true for students who study in four-year institutions. Nonetheless, when this variable is related to community college students, the situation will be very different. Academically high-achievers would like to move from a two-year college to a more prestigious four-year college. Those who can successfully transfer upward rely heavily on their performances in the two-year college. Therefore, planning to transfer is expected to have a positive correlation with college GPA. In other words, institutional goal commitment is inversely related to college GPA. A high-achiever is expected to have a lower institutional commitment and a higer chance of transferral in

a community college setting.

Academic participation: Chickering and Astin have mentioned that students enrolled in a non-residential college are very distinct from traditional residential students. They have less time to interact with the faculty and student peers, and are less likely to be influenced by college experience. For Tinto, the more harmonious the interplay between social and academic integration, the better the persistence rate. This is because he assumes that students have ample opportunities to interact and experience with the college environment. Since college GPA is only part of the academic integration and so it is expected that college GPA and academic participation will be positively correlated. Nevertheless, this relation will be very weak among junior college student.

Study Habits: Pantages & Creedon (1978) says that one of the obvious factor that affect student's persistence is the poor study habits. Poor study habits not only affect a student's persistence but also a student's school performance. This is measured in terms of ones use of the existing library facilities. Since a large proportion of the junior college students are full-time commuting students, it is reasonable to think that their study habits are very different from traditional college students. Using the library for class assignment and reading are expected to be low among these

commuting students as a whole. However, there are still much variations among different achievers. Poor study habits usually end up in poor academic results.

Participation in Extracurricular Activities: Chickering also says (1974) that "commuter students tend not to participate in the various non-classroom social, cultural, and intellectual offering of the university." It is expected that commuter students or students who attend a non-residential college usually have less time to involve in extra-curricula activities. This may limit a student's social interaction with his school environment and consequently affect his educational experience (Pascarella & others 1981, 1983; Tracey & Sedlacek, 1983.)

Changing Majors: In addition, Parscarella & Others (1981) also report that changing majors during the academic year is helpful to a student's persistence. A college student may change his major serveral times to fit his ability, interest, and possibly the market demand. A student is likely to dropout if he fails to realize his potentials in the area he is studying. However, the association between frequencies of changing majors and academic achievement is still vague among junior college students. The "time" factor is too short to allow any significant changes overt. But traditional college student who changes his/her majors more often is likely to have a positive effect on his/her college persistence even though his/her college GPA might not be the

best.

Control Variables

Control variables used in this study are: ethnic origin, native language (first language spoke), semesters in the respective college. The first two variables are controlled to identify different Asian-American subgroups: Chinese, Japanese, Koreans, Pilipinos and Vietnamese-Americans. The number of semesters in the college is restricted to two semesters or more. This will allow the respondent to accumulate a diverse grade point average for evaluation. With the rationale provided by each of the predictor variable above, the research hypothesis can be formulated as follows:

Research Hypothesis

a) Ethnicity

There will be a significant difference in college achievement within different Non-Native English speaking Asian subgroups as well as between the Whites and the Asian aggregate. This also holds when controlling for sex.

b) Level of acculturation (residence history)

Among different Non-Native English speaking Asian subgroups, the longer the length of residence in this country, the lower the academic score. In other words, high-achieving Asians (that is, Aisan-Americans with a high college GPA) tend

to be in this country for a shorter period of time.

c) Pre-college academic preparation

Pre-college academic preparation (pre-college education level, high school GPA, eligible to enter UC or CSU) is positively related to college achievement among Asian-Americans. In other words, high-achievers are more likely to have a relatively distinguished high school GPA, pre-college education level and be more eligible to enter UC or CSU upon graduation from high school.

Also among Asian-Americans, those who attended the college preparatory track in their high school program are likely to have a higher college GPA than those who attended the occupation-vocational track.

d) Social class status (Parental education, and income)

Among Asian-Americans, parental education and household income have significant positive effects on college achievement. Asian-Americans with high academic score usually have well-educated parents and high household incomes.

e) paid hours worked per week

Among Asian-Americans, paid hours worked per week and academic achievement are negatively correlated. Hence, high-achievers tend to work fewer hours per week.

f) Scholarships, grants awarded

Among Asian-Americans, the more the scholarships, loans or grants are awarded, the higher the college GPA score. Low-achievers tend to receive fewer grants, scholarships.

g) student aspiration (initial goal commitment)

Among Asian-Americans, initial degree objective (such as Master degree or higher) and college GPA are positive correlated.

h) Institutional commitment (that is, planning to transfer)

Among Asian-Americans, high-achievers tend to transfer to other colleges, and have a low institutional commitment. Hence, institutional commitment and college GPA are negatively correlated.

i) Academic involvement, study habits and extracurricular activities[4]

Among Asian-Americans, the academic involvement, study habits and extracurricular activities college achievement are positively correlated with college performance.

j) Changing Majors

Among Asian-Americans, changing major is more frequent among high-achievers than other achievers.

All of the above research hypotheses also hold between the Native and Non-Native English speaking Whites and the Asian aggregate.

Analysis

Simple univariate analysis tables will be run for each of the variables mentioned above, followed by a series of cross-tabulation tables between the dependent variables and independent variables (refer to Appendix.) The Chi-Square test, T Test, Test for Tau b, One-Way and Two-Way ANOVA are used to select significant variables for final analysis. In order to save space, cross-tabulation tables or test for significance tables will not be shown. Consequently, a multiple discriminant analysis is used in order to distinguish what combination of variables can best discriminate the high-achievers, the average-achievers and the low-achievers.

All discriminating variables, which correlate with college GPA and show statistically significant in the tests (X^2- test, Test for Tau b, Two-Way Anova) are included in the final analysis. The multiple discriminant analysis can set up patterns for each group (that is, low, average, and high) on each variable and the inter-correlations of the variables. If the patterns are clearly distinct, the set of variables can discriminate between the groups.

A similar analysis is conducted for the Whites. The purpose is to find out whether the set of discriminators in predicting the high-, the average-, and the low-achievers are different across race. In the stepwise procedures, Wilks's Lambda is employed as a criterion for selecting

discriminating variables.

The final step is to include ethnicity (the five Asian ethnic subgroups) as an added predictor variable onto the whole student sample who are classified as either the US citizens or permanent residents and have been in the respective college for two or more semesters. The purpose is to examine whether ethnic status is able to discriminate among the groups as well.

Limitations and Delimitations of the Study

This study relies on two sets of questionnaire designed by the LACCD Educational Service center to do a secondary data analysis. Therefore, it has two major limitations: (a) the items use in the analysis can only be seen as an approximation of some concepts being tested. For example, the measuring of study habits by the use of library facilities might not be good indicators, the number of hours used in studying may be a more appropriate indicator and (b) the number of students for certain subgroup, like Japanese Americans, is too small for valid interpretations and generalizations.

This first limitation restricts this study to examine the effects of other variables (like cognitive abilities, self-concept, proficiency in English language) on academic achievement.

With respect to the second limitations, the reader should

be careful when making generalization about the nine community college students under study, especially to those community colleges where there are uneven distribution of Asian ethnic subgroups (Table 1.)

Table 1. SELECTED POPULATION CHARACTERISTICS BY COLLEGE SERVICE AREA, 1988 (TOTAL POPULATION=4,713,462)

College Service Area	Ethnicity			Age	
	Asian %	White %	Others[1] %	18-24 %	25-54 %
City	13.6	44.0	39.9	52,488	293,163
East	8.2	20.0	71.0	88,499	321,350
Harbour	9.9	50.8	38.2	36,432	159,552
Mission	4.1	55.7	39.3	34,762	144,417
Pierce	4.2	83.1	11.7	42,103	195,468
Southwest	5.9	7.8	85.7	41,736	144,201
Trade-Tec	8.3	8.1	82.6	56,386	211,889
Valley	4.3	72.3	22.2	42,202	221,274
West	6.5	56.7	35.4	55,384	282,283
Whole District	7.6	43.3	47.9	449,992	1973,597

Source: Annual Information Digest, LACCD 1989.
[1] Others, include Blacks and Hispanics.
[2] Age, 54 and over are not listed in this table.

In order to make up these deficiencies, a series of follow-up "snowball" like interviews is conducted by the researcher. He intends to collect more related information to interpret and verify the data he has analyzed. Meanwhile, other predictor variables which are not included in the student survey form, can also be explored.

The delimitations of this study are that it includes both full-time and part-time community college students. The student must enroll in one of the nine community colleges for at least two semesters and he/she must be either a U.S citizen or a permanent resident (Green Card holder.)

Summary of Major Findings

Do factors related to academic achievement differ by ethnicity?

In brief, we can say that factors related to academic achievement do vary by ethnicity. Relatively speaking, there are things that are common across ethnicity but there are also things that vary across subgroups. The common things are: marital status of respondents, age, participation in extra-curricular activities and changing majors. The things that vary are: academic preparation, precollege education, high school program, socioeconomic status, resident history, paid hours worked, academic involvement, and study habits.

Recent immigrants often earn less than those who have been in this country for a longer period of time. At least a quarter of the students among each Asian subset is married. The native-English speaking Whites and the Japanese-Americans have the largest proportion of respondents who have a 2.99 or lower high school GPA. Many of the respondents have attended a high school before or just attained a high school diploma. The "general" high school track is the average preference for all groups yet the college preparatory track is also common among the native-English speaking Whites, Pilipino- and Korean-Americans. The Pilipino- and Korean-Americans have the largest percentage of those who are eligible to enter UC (University of California system, 8 campuses) or CSU (California State University, 20 campuses) after high school

graduation, the Japanese-Americans, on the other hand, have the least.

Basically, many students are in their early twenties in this sample. Except for the Japanese-Americans, over three-fifth of other Asian ethnic subgroups are aiming at getting a baccalaureate or higher degree. Three out of five of these students in each Asian subset have attended the respective college for two to four semesters. The Vietnamese-, the Korean- and the Chinese-Americans represent the three largest subgroups which have the shortest resident record of less than ten years while the Japanese-Americans are more evenly distributed in all attributes of this variable. Around half of the students in each Asian subset works more than 20 hours per week. In fact, working full- or part-time is a common practice among all commuting students. By far, the Vietnamese- and the Chinese-Americans receive the greatest support from the grants, scholarships or fellowships. Over two-third of the students are planning to transfer to a two- or four-year public or private institution. In general, all Asian ethnic subgroups used the library for study and class assignment more frequent than the native-English speaking Whites. Regardless of racial difference, around three quarters of the students never participated in any athletic program. The native-English speaking Whites and Pilipinos are more involved in class discussion than other Asian ethnic subgroups. Reading other assigned materials are also common

among the native-English speaking Whites than other Asian ethnic subgroups. A fifth of the Chinese- and Japanese-Americans never talk to their instructors in the whole semester. Except for the Japanese-Americans, over three-quarters of the students never participate in the Music-Theater Programs. Again, regardless of racial differences, a quarter of the student has changed their majors once or more times. Bearing with all these major differences in mind, we can see how these Asian-American subgroups vary when running the final discriminant analysis.

Do All Asian ethnic subgroups perform equally well academically? Who Do and Who do not? Does this academically differences also vary by race?

One way to validate the umbrella term "All Asian-Americans are model minority" is to compare the mean college GPA distribution of among each Asian ethnic subgroup and examine how they deviate from the grand mean.

In table 2, with a scale of three levels, that is, a range of one to three or ranking from low to high, the Korean-Americans has the highest college GPA among all Asian-American subgroups (2.02) followed by the Chinese- and Vietnamese-Americans. If the grand mean is used as a cutting point between the low- and the high-achievers, those who are close to the grand mean (1.809) are the average-achievers while those above or below the grand mean are the high- and the low-achievers respectively. In this case, the Korean-Americans can be classified as the high-achievers, the

Chinese-Americans as the average-achievers, and the Vietnamese- and Pilipino-Americans as the low-achievers. In table 2, the F ratio is significant at $p<.001$ level indicating that the chances of getting a sample from a population of equal group means is only one out of a thousand. Therefore, it is likely that the sample is coming from a population with different group means. In the second half of table 2, the difference between the Asian aggregate and the Whites were also significant at $p<.001$ level ($t=-3.40$). The mean college GPA for the Whites (1.8584) was only slightly higher than the Asian aggregate (1.7598). Hence, it is hard to tell whether the college GPA of the Whites are higher than the Asian aggregate. However, when it is compared to the grand mean (1.8297), the Whites are just above the grand mean and the Asians slightly below it. In fact, there are much variation within the Asian-American subgroups as indicated above. Therefore, to consider the Asian aggregate as one homogeneous group can easily mask the result.

Table 2. Differences in Mean College GPA among Five Asian-American Subgroups and between the Asian Aggregate and the White with a Scale of 3 levels.

Asian Subgroups	Mean	Standard Deviation	Cases
Chinese	1.8382	0.7847	272
Japanese	1.6765	0.7270	34
Koreans	2.0236	0.8014	127
Pilipino	1.6766	0.7220	167
Vietnamese	1.7381	0.7713	126
Grand Mean	1.8085	0.7758	726

F(4,721) = 4.3305 p<.001
Eta = 0.1532
Eta Square = 0.0235

Race			
Asian Aggre.	1.7598	0.7672	1016
White	1.8584	0.7808	2472
Grand Mean	1.8297	0.7780	3488

t-test (3486) = -3.40 p<.001

If college GPA is a used as the only indicator of academic achievement then we can tell from table 2 that not all Asian-Americans are alike. They are significantly differed not only within group (five Asian-American subgroups) but also across group (the Whites versus the Asian aggregate.) Some of the Asian subgroups can be identified as the high-achievers while others the average- and the low-achievers.

What are the demographic, background and academic characteristics that distinguish the high-, the average-, and the low-achievers? Do these factors differ significantly among the three achieving groups? And do they vary by race?

In general, we can say that the demographic, background and academic characteristics among the three achieving groups differ. Some of these differences also reach the significance level of 0.05, 0.01, and 0.001 but these factors seem to vary little across race.

Among the Asian aggregate, the low-achievers are predominately single male, with high parental education but low total personal household income and have been in this country for a longer period of time. Their precollege academic preparation are less equipped than other achievers. They aspire to an AA or a baccalaureate degree and change majors more frequent than other achievers. Average-achievers are largely single or married female. High-achievers, on the other hand, are either married or single female, with fewer of them reported that English as their first language. Their parents' education level are low but the personal household incomes reported are high. They have been in this country for a shorter period of time, usually less than 10 years. Their precollege academic preparation are also more prepared than other counterparts. They have relatively distinguished high school GPA, and have a higher eligibility to enter the UC and CSU system. They are more likely to enroll in the college preparatory track. They aspire to a baccalaureate or a higher

degree and are less likely to change majors.

Among the Whites, the low-achievers also tend to be single male, with high parental education but low total household income. They are less prepared academically, and aspire to a baccalaureate or lower degree. Changing majors are more frequent among the low-achievers. Similar to the Asian aggregate, the average-achievers are likely to be single female. High-achievers are either single or married female, with low parental education but high personal household incomes. Similar to the Asian counterparts, they are also more prepared before college, aspire to a baccalaureate or higher degree and less likely to change their majors. Other characteristics like: scholarships or grants awarded, institutional commitment, paid hours worked per week do not seem to vary much across the three achieving groups for the Whites.

Basically, the differences in selected characteristics among the three achieving groups look very similar between the Asian Aggregate and the Whites, except that the residence history in the United States among the Asian-Americans are much shorter. However, the difference between the Whites and the Asian Aggregate become more distinct when the set of variables are considered simultaneously as indicated earlier in the discriminant analysis.

There is without a doubt that inferential statistics depicts information on how individual variable differs

significantly between groups as well as among groups. But it is more interesting to analyze the variables together than one at a time. It is possible that variable which is significant in a bivariate analysis might become insignificant when treated as part of a set of measures. Discriminant Analysis is one of the multivariate techniques uses to detect these differences.

What sets of variables discriminate who are high-, average- and low-achievers? Does the set of discriminating variables vary by race?

Results: Asian Aggregate & Whites (include both Native and Non-Native English Speakers)

As indicated in table 3, the number of native-English and non-native-English speaking Asians are 139 and 906 cases respectively. Together they add up to 1,045 cases for analysis. Basically, those variables which show significant differences in the respective tests: a Two-Way Anova or t-test, Tau B test, and Chi-square test, will be used to discriminate among groups. But Tatsuoka reminds that "high statistical significance does not necessarily imply a large magnitude of difference or strong association especially when the sample size is large (Tatsuoka, 1970:48)." Variable which is significant in a univariate or bivariate analysis does not insinuate that it is also significant in a multivariate analysis. Discriminant analysis abets to gauge the extent of these differences. The mean, standard deviation

and univariate F ratio of each discriminating variable for individual subgroups and for both Asian aggregate and the Whites are shown in Table 4, 5 and 6. These provide some ideas of how these variables differ across groups in the calibration sample.

TABLE 3. SEX BY RACE BY ENGLISH LANGUAGE FOR THE SAMPLE POPULATION OF THE L.A.C.C.D.

	English Speaking		Non-English Speaking	
	Asian	White	Asian	White
Female	65	1218	461	145
Male	74	1012	445	146
Total	139	2230	906	291

The Asian Aggregate

Table 4 indicates how groups differ on individual characteristics for the Asian Aggregate. You can see that the mean age of the high-achievers is higher than the average and the low-achievers and so is their high school grade point average, precollege education level, paid hours worked during the semester, scholarship received and academic involvement. However, a reverse direction occurs when you examine the variables of parental education, household income, time in the United States and frequency of changing majors. It indicates that high-achievers usually have a lower annual household income, a shorter residence history in this country, parents with lower education level and less frequent of changing majors. The dummy coded variables: sex, marital status, planning to transfer to other college, high school track and degree aspiration carry little information by looking at the mean. (refer to table 5)

The stepwise discriminant analysis in table 7 shows the relative contribution of the variables to the discriminant function I or II. Of the 21 variables used in the analysis only nine variables enter the equation and of the two possible discriminant functions only function I is significant at $p<.001$ level. The canonical Rc^2 for function I ($rc = 0.5082$) indicates a moderate positive relations between the set of dummy variables which define the group membership and the discriminant function. But the canonical Rc for function II

is weak (rc = 0.2) and insignificant. The Eigenvalue for Fucntion II and Wilk's Lambda after Function I, which indicate that the three groups had the same mean are not rejected. Hence, function II can be ignored. Since Function II is not likely to contribute much of the theoretical and practical importance, we focus on Function I for explanation (Kleck 1984:17.) The first function is defined largely by a distinguished high school GPA, being older female, awarded with scholarships or grants, low parental education and aspiring for a degree other than AA or BA (i.e. MA.) The average scores or group centroids are "the mean discriminant score for each group." Here, the low-achievers have an average of -0.5893, the average-achievers have an average score of 0.2063 and the high-achievers have an average score of 0.9545. It indicates that function I separates the high-achievers from the average- and the low-achievers more clearly than the average- versus the low- or the average- versus the high-achievers. The separation of groups between the average- and the high- is a little bit blurred in this case. The average-achievers are closer to the high-achievers than to the low-achievers. When examining the results of the classification analysis in table 7. The overall percentage of correct classification based on the demographic, background and academic equation is 57.06% for the calibration sample. When the discriminant coefficient for function I, II are used to classify cases to the raw data of the validation sample.

The overall correct classification of cases is 47.17%, a drop of 9.89%. Since the prior probabilities of each group are set at it's own group size (.44/.37/.19) for both calibration and validation samples. It is found that the correct classification for average-achievers is no better than chance and is under-represented in the validation sample. Therefore, it indicates that the discriminant model which is used to classify cases into the average group is less efficient. Perhaps, a pairwise comparison of the three groups (low versus average, average versus high, low versus high) might help to clarify these differences.

TABLE 4. MEANS, STANDARD DEVIATIONS, AND UNIVARIATE F RATIO FOR ALLINDEPENDENT VARIABLES IN THE CALIBRATION SAMPLE (ASIAN AGGREGATE ONLY)

Univariate Variable	Low_ Achievers (N = 103) M	SD	Average_ Achievers (N = 86) M	SD	High_ Achievers (N = 45) M	SD	F ratio
(DEMOGRAPHIC VARIABLES)							
Female	0.38	0.49	0.58	0.50	0.60	0.50	5.23**
Single	0.87	0.33	0.70	0.46	0.60	0.50	7.84**
Married	0.12	0.32	0.19	0.39	0.31	0.47	4.12*
Age	23.16	6.02	26.42	8.31	28.58	7.71	10.08**
(BACKGROUND VARIABLES)							
IGC(Cer)	0.06	0.24	0.07	0.26	0.11	0.32	0.65@
IGC(AA)	0.13	0.33	0.11	0.31	0.04	0.21	1.14@
IGC(BA)	0.55	0.50	0.45	0.50	0.42	0.50	1.47@
Transfer	0.88	0.32	0.85	0.36	0.69	0.47	4.50*
HS GPA#	2.96	0.42	3.15	0.41	3.39	0.36	18.43**
Pre Col	3.33	0.92	3.59	0.94	3.82	1.07	4.51*
Col prep	0.25	0.44	0.24	0.43	0.33	0.48	0.67@
Occu Voc	0.13	0.33	0.07	0.26	0.07	0.25	1.12@
Eligible	0.42	0.50	0.42	0.50	0.47	0.50	0.15@
Time US	2.58	1.14	2.40	1.30	2.42	1.44	0.53@
Par Edu	4.11	1.79	4.13	1.79	3.49	1.67	2.29@
Household Income	23216.71	18747.38	19744.69	1810.24	17733.83	14285.08	1.71@
Scholarship	354.85	782.32	477.8	1038.63	506.03	848.82	0.65@
(ACADEMIC VARIABLES)							
Hrswork	19.97	15.24	21.36	16.37	22.69	15.59	0.63@
Aca Par	2.39	0.64	2.53	0.73	2.58	0.80	1.48@
Stu Hab	2.81	1.00	2.83	1.08	2.71	1.10	0.21@
Cha Maj	1.53	0.71	1.45	0.59	1.27	0.58	2.70@

High school GPA '3'=3.50_4.00 '2'=3.00_3.49 '1'=2.99_2.00 new students with no GPAs are omitted from this analysis.
@ not significant at 0.05 level
* p<.05
** p<.0001
IGC = Initial Goal Commitment

The Whites

When examining the simple descriptive statistics of the White subsample (table 5) I discovered that the age cohort among the high-achievers are much older (at least 8 year difference) than the low-achievers and the average-achievers (at least 4 years older.) The high school GPA, precollege education level, scholarship received, and academic involvement also indicate lower among the low-achievers but higher between the average- and the high-achievers. The relation, however, is reversed when you examine the parental education, paid hours worked, household income, study habits and frequencies of changing majors, have parents with more years of education, higher household income, working more hours and strangely enough, more frequent use of library for study and course assignments. The variable Time in the United States were quite inconsistent across groups but the trend seemed to indicate that high achieving students tend to have a longer resident history. However, the contrast between the low- versus the average- or the low- versus the high-achievers are more clear-cut.

TABLE 5. MEANS, STANDARD DEVIATIONS, AND UNIVARIATE AND MULTIVARIATE F RATIO FOR ALL INDEPENDENT VARIABLES IN THE CALIBRATION SAMPLE (WHITES ONLY)

Univariate Variable	Low_ Achievers (N = 217) M	SD	Average_ Achievers (N = 197) M	SD	High_ Achievers (N = 132) M	SD	F ratio
(DEMOGRAPHIC VARIABLES)							
Female	0.43	0.50	0.50	0.50	0.64	0.48	7.24**
Single	0.81	0.40	0.64	0.48	0.40	0.49	32.94**
Married	0.12	0.33	0.24	0.43	0.43	0.50	23.70**
Age	24.18	7.96	27.92	9.90	32.36	10.12	32.44**
(BACKGROUND VARIABLES)							
IGC(Cer)	0.04	0.19	0.07	0.26	0.10	0.30	2.73@
IGC(AA)	0.06	0.24	0.07	0.26	0.14	0.35	4.14*
IGC(BA)	0.51	0.50	0.44	0.50	0.41	0.49	2.07@
Transfer	0.84	0.39	0.77	0.42	0.70	0.46	4.94**
HS GPA#	2.89	0.40	2.99	0.43	3.11	0.53	9.84**
Pre Col	3.35	0.74	3.73	0.97	3.99	1.01	22.38**
Col prep	0.32	0.47	0.35	0.48	0.51	0.50	6.58**
Occu Voc	0.07	0.25	0.11	0.32	0.07	0.25	1.50@
Eligible	0.37	0.48	0.36	0.48	0.33	0.47	0.22@
Time US	4.89	1.39	5.23	1.17	5.17	1.24	4.08*
Par Edu	4.55	1.47	4.40	1.54	4.29	1.57	1.34@
Household Income	34535.56	19792.91	32345.68	19463.01	31864.14	20799.58	0.99@
Scholarship	76.77	458.46	121.30	417.56	131.16	479.01	0.78@
(ACADEMIC VARIABLES)							
Hrswork	24.54	14.38	24.07	14.88	23.12	16.12	0.37@
Aca Par	2.67	0.71	2.86	0.78	2.88	0.62	5.02**
Stu Hab	2.51	1.10	2.36	1.13	2.28	1.19	1.86@
Cha Maj	1.59	0.69	1.51	0.69	1.40	0.62	3.07*

High school GPA '3'=3.50_4.00 '2'=3.00_3.49 '1'=2.99_2.00 new students with no GPAs are omitted from this analysis.
@ not significant
* p<.05
** p<.0001

In table 7, of the two possible functions, only function I is significant at $p<.001$, the Eigenvalue (0.2746) and the canonical r for function I (0.4641) all indicate that the ability of the discriminant function to distinguish among the groups. The canonical r for function is weak (r=0.1549) and the insignificance of the Wilk's lambda implies that further analysis using function II is of less substantive meaning. The variables which have the largest contribution on Function I are: having a good precollege education background, good high school GPA, enrolled in college preparatory track, more involved in academic participation, being married and more mature. Among the Whites, of the 13 variables in the discriminant equation, at least half of them (that is, with a loading of 0.24 or over) are found in the equation that discriminated the three achieving groups. The proportion of variance explained by the discriminant function I is 22%. The average score for the low-achiever in function I is -0.5525, the average-achiever is 0.0819 and the high-achiever is 0.7860. Again, group 2 (average) is closer to group 3 (high) than group 1 (low). The distinction between average- versus high-achievers is not really that clear-cut when looking at the distribution of scatter-plot. Hence, a pairwise comparison of the groups is necessary.

In summary, an equation based on the 13 variables significantly discriminate the three groups of achievers and correctly identified 51.00% of an independent validation

sample. The overall percentage of correct classification in the validation sample is a significant improvement by chance (that is, .40/ .36/.24 at p<.0001.)

Separate Pairwise Comparison for Different Groups Between the Asian Aggregate and the Whites

As recalled from previous analysis of the three achieving groups among the Asian aggregate and the Whites, not a very clear picture or a separation of the three groups is made by the set of discriminating variables especially between the average- versus high-achievers among the Whites and the Asian Aggregate. A pairwise comparison of the groups is used in order to find out which set of variables distinguished the low- versus the average, the average- versus the high-, and the low- versus the high-achievers. In order to save space, I try to summarize the result in Table 7. Interested readers can review the information given in this table themselves. With those variables that entered the equation, the researcher considered a loading of 0.25 or above is worth discussing.

Table 7. DEMOGRAPHIC, BACKGROUND AND ACADEMIC VARIABLES DISTINGUISHING LOW-, AVERAGE- AND HIGH-ACHIEVERS (3 GROUPS) AS WELL AS BETWEEN LOW- VERSUS AVERAGE-, AVERAGE- VERSUS HIGH-, AND LOW- VERSUS HIGH-ACHIEVERS FOR THE WHITES AND ASIAN AGGREGATE.

	Aggregate		Subsamples					
	A	W	A	W	A	W	A	W
	L-A-H		L-A	L-A	A-H	A-H	L-H	L-H
DEMOGRAPHIC VARS								
Female	.33		.54					.11
Age	.47	.32	.55	.29		.41	.43	.30
Marital Status								
Single		-.23		-.21		.41		-.35
Married		.25				.64		.23
BACKGROUND VARS								
Time in U.S.		.20		.35			-.43	.19
Precollege Edu.		.24		.36			.23	.23
Eligibility		-.18		-.17	.27			
Hi Sch Track								
Occup-Voc	-.22	-.01	-.32	.16		-.28		
Coll-Prep		.28				.24		.09
High Sch GPA	.59	.32	.39	.33	-.81	.32	.66	.33
Parent Edu	-.27							
Household Inc		-.21				-.26		
ACADEMIC VARS								
Paid Hrs Wks		-.15		-.15				
Grants/Schrs	.29		.40			.31	-.18	.11
Goal Commit.								
Cert								-.10
AA	-.34	.20	-.28		.43		-.25	
BA	-.28		-.34	-.17	.50		-.32	-.18
Instit. Com.	-.12							
Acad Parti		.24		.43				.25
Study Hbts				-.18				
Change Majors							.16	-.18
Group Centroids								
Low	-.59	-.55	-.39	-.35			-.50	-.66
Average	.21	.08	.47	.38	.35	-.25		
High	.96	.79			-.59	.37	1.21	1.06

Eigen Value								
	(I)	.35	.28	.18	.13	.21	.09	.62	.70
	(II)	.04	.05						
Wilk's Lambda									
Canno. r(I)		.51	.46	.39	.34	.42	.29	.62	.64
Canno. r(II)		.20	.16						
Canno. r(I)		.26	.22	.15	.12	.18	.08	.38	.41
Canno. r² (II)		.04	.02						
	(I)	77.04	143.35	30.90	50.59	21.20	29.34	61.08	184
	(II)	9.23	13.04						
DF	(I)	18	26	7	11	4	7	8	13
	(II)	8	12						
Sig. level									
	(I)	.001	.001	.001	.001	.001	.001	.001	.001
	(II)	NS	NS						
Overall % of Corr Classi.									
Calibra S.		57	54	72	65	72	62	85	81
low		78	74	80	75			90	88
average		43	38	61	53	87	78		
high		33	42			43	37	71	69
Valida S.		47	51	59	65	70	66	79	76
low		65	76	68	77			86	85
average		32	34	45	53	87	81		
high		24	38			37	42	64	62
Group Size Proportion									
low		.44	.40	.54	.52			.71	.61
average		.37	.36	.46	.48	.63	.59		
high		.19	.24			.37	.41	.29	.39
Total N		234	546	189	414	115	336	133	355

L-A-H stands for discriminant analysis with Low-Average-High groups. L-A is low- versus average-achievers, A-H is average- versus high-achievers and L-H is low- versus high-achievers.

In a nutshell, the direction of all the discriminant variables that differentiate groups are as expected. There are variables which are common as well as unique to both the Whites and the Asian aggregate. Variables which are common in both ethnic groups include age, high school GPA, high school track, and initial goal commitment. The variables which are unique to the Asian aggregate are sex, parental education, and scholarships or grants awarded. But for the Whites, the unique variables are marital status, duration in the United States, precollege education, college-preparatory track, household income and academic involvement.

Can different Asian ethnic identities be used to predict who are the high-,the average- and the low-achievers? In other words, can we classify people to the high, average, or the low achieving group by knowing their ethnic identities?

In table 6 and 8, the five Asian-American sub-groups are entered simultaneously with the other twenty-one independent variables to see whether ethnicity helps to classify group membership. The two discriminant functions are found to be significant at 0.05 level. Variables which have a discriminant coefficient loading of 0.25 or higher in function I are: age (.51), high school GPA (.52), aspiring for a baccalaureate degree (-.30) and academic involvement (.32). In function II, we have predictors like Chinese (-.32), Korean (.26), Pilipinos (-.25), married status (.36), pre-college education (-.52), paid hours worked per week (-.32) and grants or scholarships awarded (.30). Even though demographic,

background and academic variables all enter the equation simultaneousiy, demographic variables tend to weigh heavily on function II than on function I. In general, function I is likely to describe high-achieving students as being older, have a relatively distinguished high school GPA, more academically involved and do not aspire only a baccalaureate as their final degree objectives. But less academically involved young students, with a relatively low high school GPA, and aspire only an AA or a baccalaureate degree are likely to be low-achievers. The distinction between high- and low-achievers is more clear-cut in function I. In function II, however, the discriminant variables tend to be more associated with the average-achievers than other groups. Being Chinese or Pilipinos, working during the semester, and having a good pre-college education background are likely to be average-achievers. Being older Koreans, married, and receiving grants or scholarships were likely to be high-achievers. Around 23% of the variance in predicting group membership is explained by function I and only 2% by function II. The overall percent of correct classification for the calibration sample and the validation sample are 55.35% and 51.67% respectively. In a nutshell, Asian ethnic subgroups helps to classify cases into different group memberships. More people are correctly classified into the low- and the high-achieving groups than to the average-achieving group.

In short, we can conclude that not all Asian-Americans studying in the nine community colleges are the same. Some of them can be identified as high-achievers while others the average- and the low-achievers. And the linear combination of variables that differentiate the 3 achieving groups also vary across race.

TABLE 6. MEANS, STANDARD DEVIATIONS, AND UNIVARIATE F RATIO FOR ALLINDEPENDENT VARIABLES IN THE CALIBRATION SAMPLE (ASIAN SUBGROUPS)

Univariate Variable	Low_ Achievers (N = 702) M	SD	Average_ Achievers (N = 528) M	SD	High_ Achievers (N = 262) M	SD	F ratio
(DEMOGRAPHIC VARIABLES)							
Female	0.50	0.50	0.57	0.50	0.59	0.49	4.05
Single	0.78	0.41	0.64	0.48	0.45	0.50	53.89
Married	0.14	0.34	0.23	0.42	0.40	0.49	41.89
Age	24.23	7.50	27.76	9.26	32.47	10.63	88.35
Chi	0.03	0.18	0.05	0.22	0.03	0.18	1.18
Jap	0.01	0.08	0.00	0.06	0.00	0.06	0.38
Kor	0.01	0.10	0.01	0.10	0.03	0.18	4.73
Pil	0.02	0.14	0.03	0.18	0.03	0.16	0.93
Viet	0.02	0.15	0.02	0.13	0.03	0.17	0.75
(BACKGROUND VARIABLES)							
IGC(Cer)	0.03	0.18	0.07	0.26	0.09	0.28	7.38
IGC(AA)	0.13	0.33	0.09	0.29	0.09	0.29	2.27
IGC(BA)	0.50	0.50	0.29	0.49	0.30	0.46	18.18
transfer	0.78	0.41	0.77	0.42	0.73	0.44	1.47
HS GPA	2.94	0.40	3.11	0.42	3.25	0.48	57.55
Pre Col	3.31	0.70	3.70	0.99	3.88	1.03	51.86
Col prep	0.28	0.45	0.35	0.48	0.37	0.48	4.70
Occu Voc	0.10	0.30	0.10	0.30	0.11	0.31	0.03
Eligible	0.34	0.47	0.38	0.49	0.39	0.49	1.38
Time US	4.16	1.62	4.30	1.65	4.42	1.79	2.50
Par Edu	3.74	1.78	3.77	1.72	3.88	1.70	0.64
Household Income	23150.07	19179.14	24858.45	18857.11	27103.55	19974.72	4.23
Scholarship	246.92	751.84	176.81	621.86	254.87	688.26	1.85
(ACADEMIC VARIABLES)							
Hrswork	23.27	15.23	25.03	15.70	23.34	16.23	2.14
Aca Par	2.61	0.69	2.77	0.73	2.91	0.77	18.72
Stu Hab	2.72	1.04	2.58	1.10	2.58	1.14	3.13
Cha Maj	1.53	0.69	1.43	0.62	1.38	0.61	6.48

High school GPA '3'=3.50_4.00 '2'=3.00_3.49 '1'=2.99_2.00. New students with no GPAs are omitted from this analysis.
@ not significant at 0.05 level

TABLE 8. ETHNICITY, DEMOGRAPHIC, BACKGROUND AND ACADEMIC VARIABLES DISTINGUISHING LOW-, AVERAGE- AND HIGH-ACHIEVERS (3 GROUPS)

	Model 1	
Function	I	II
DEMOGRAPHIC VARS		
Asian Subgroups		
Chinese	.17	-.32
Japanese		
Korean	.20	.36
Pilipinos	.05	-.25
Vietnamese	.09	.09
Female		
Age	.51	.32
Marital Status		
Single		
Married	.22	.36
BACKGROUND VARS		
Time in U.S.	.18	-.00
Precollege Edu.	.14	-.52
Eligibility	-.09	.03
Hi Sch Track		
Occup-Voc		
Coll-Prep		
High Sch GPA	.52	-.04
Parent Edu	.07	.20
Household Inc		
ACADEMIC VARS		
Paid Hrs Wks	-.11	-.32
Grants/Schrs	-.02	.30
Goal Commit.		
Cert		
AA	-.14	.15
BA	-.30	.09
Instit. Com.		
Acad Parti	.32	-.18
Study Hbts	-.12	.18
Change Majors		

Group Centroids		
Low	-.51	.07
Average	.20	-.18
High	.95	.17
Eigen Value	.2955	.0188
Wilk's Lambda	.7576	.9816
Canno. r.	.4776	.1358
Canno. r²	.2281	.0184
Chi -squared(df)	411.03(34)	27.57(16)
Sig. level	0.00	0.04

Overall % of Corr Classi.	
Calibra S.	55.35
Low	81.10
Average	33.50
High	28.90
Valida S.	51.67
Low	79.10
Average	27.50
High	25.60

Group Size Proportion	
low	0.47
average	0.35
high	0.18
Total N	1492

The Korean-Americans by far have the highest scores among all Asian-Americans, followed by the Chinese-Americans and Pilipino-Americans. The Vietnamese- and the Japanese-Americans are close to and below average. The question here is why Korean-Americans attending junior college are likely to be high-achievers while Pilipino- and Chinese-Americans are average-achievers and Vietnamese-Americans are lower-achievers? The answer seems to be a complicated one. The common belief that all Asians can be crowned as model minority does not hold in this study, especially in the context of a junior college. The data indicated that the college effects like academic involvement, extracurricular activities, study habits are quite uniform among the Asian-Americans. Therefore, what makes the difference in college performance is more likely to come from the background characteristics as mentioned above. The difference in college performance reflects, to a certain extent, a socio-cultural one.

Some Asian-Americans have been in this country for two to three generations while others are recent immigrants. Those who have a long resident history in this country must have gone through the process of adaptation: acculturation, integration and assimilation (Gordon, 1964) while others may still in their early stage of adjustment. For example, the third generation Asian-Americans may consider themselves not

too distinct from the majority Whites even though they look physically different. At least, they have no language barriers. As Kitano indicated when he examined the Sansei (that is, third generation Japanese-Americans who are born in the United States to Nisei parents), "their test results, achievement and interest preferences and social values are typically American" (1969:142). The recent immigrants, however, are very different as recorded in my interviews. They carry not only many of their ancestor's cultural values like obedience, family pride, face-saving, high discipline, perseverance but also they are limited in English proficiency. Of course, this limitation in English proficiency can not apply to the recently immigrated Pilipino-Americans in this study. In addition, the cultural values that they accept also depend on which Asian ethnic group they belong to (Yamagata-Noji, 1987; Monzon, 1984; Thai, 1982). Hence, even among the Asian-Americans there are much background variations within themselves.

Nevertheless, as reviewed earlier, the writer is much concerned with the social or school environment which is more or less the same. What explain the difference depends on how they adjust to this social environment. Some adjust more quickly with the 'resource' that they possess or what they brought with them when they immigrated to this country. Resources like wealth, professional skills, language skills or

other abilities. Others (like recent immigrated Vietnamese refugees) might have little or no 'resource' at all (e.g. the Vietnamese Hwong tribe.) The study reflects that recent immigrants with less than 10 years can perform better if they come from middle upper class families where they are more academically well-prepared before attending the respective college. This is confirmed in my interviews. For example, many recent immigrated Korean-Americans already have some sort of college background and a relatively distinguished high school GPA. They do not avoid the academic status differences between a two-year and a four-year college as much as other Asian-Americans who have been in this country for a longer period of time. The Vietnamese-Americans, on the other hand, do not perform as well as the Chinese-, the Korean-, and the Pilipino-Americans because i) many of them come from poor families ii) have weak educational background and iii) have limited English proficiency. Even though the reason for the poor performance of the Japanese-Americans is unclear in the junior college. I presume that the level of acculturation must have an effect in here.

Sue and others (1988, 1990) have once denoted that the level of acculturation and the perceived limitation in social opportunity are inversely related. Recent immigrants often consider strong educational backgrounds essential in broadening their field in the non-educational area. Many

recent immigrants in my interviews often stress the importance of having more credentials when applying for a job. They like to work in large "white-man company" but realize that they are impaired in verbal ability and so they need to emphasize on their quantitative skills in order to get hired (Bagasao, 1983). Without a doubt, this will create unnecessary competition among themselves in the job market. A large proportion of my respondents plan to transfer to a better university after the completion of the required course works. They strive hard to maintain an 'A' average. Given enough support from parents, friends, and financial programs, they really want to get a baccalaureate or higher degree in order to secure a better job in the future. They perceive a limitation in occupation opportunity if they rely solely on an Associate or a lower degree. Nonetheless, things never work out nice and easy, some Asian-Americans fail to perform as well as others. In my interview, they often reported parental support, home environment, cultural values and personal ability are closely connected with college performance. Parents with higher educational background usually give more attention to their children's school performance and are likely to provide a favorable home environment for them to study. Asian parents, in particular, prefer their children not to work during the school year. They encourage them to concentrate on their studies in order to get good grades for

future "benefits." In contrast, parents with low education may not necessarily value the importance of these. Besides, the respondents also mention that big brothers and big sisters who attended university or college also act as role models to their academic success. If they have no brothers or sisters, their peer groups and parental influences become more essential. In addition, problems in academic studies can be remedied if they know where to get assistance such as brothers, sisters, friends and teachers. However, they seldom consult their teachers because of language difficulties or cultural barriers. Therefore, these added information has broadened our knowledge in understanding the differences in college performance among Asian-Americans.

Implications and Suggestions

1. Since demographic and background variables are considered more essential in predicting college performance in both interview and secondary data analysis among community college students, it would be more advantageous if we could collect more background information that distinguish these differences. Factors like parental support, language proficiency, ethnic identity, cultural values, peer group influence and home environment are worth exploring.

2. Secondly, this study also discovered that not all Asian-Americans are alike, and therefore, lumping all Asians

into one homogeneous group will mask the results of many findings. Statistics could be underestimated or over-represented. Financial budgets would not have been cut short or programs canceled if more representative data are collected from each of the ethnic subgroups. However, the researcher would like to remind to all interested readers that this study can not generalize to all community college students, especially among the Japanese-Americans who have a very low college GPA in this study. The Japanese-Americans in this study only represent a very typical sample of all Japanese-Americans studying in the junior college. Japanese-Americans with distinguished high school performance may be more likely to choose a selective four-year college rather than a community college because they have been around long enough to recognize that the selective four-institutions have higher status or prestige and are more useful in occupational placement. Hence, that upper segment of the Japanese-American population is not represented in this study.

3. This study uses college grade point average as the only criterion for classifying students into different achieving groups. And so, there are some limitations that interested parties should be aware of. Jonathan Warren (1971:8-20), in his examination of grading practices in college indicates that the purposes of grades are many. The purpose of grading can be used as a) a selection device for

advanced education, fellowships and awards, honors, transfers or employments or b) a motivator to induce students to learn and c) an informative mechanism about student performance. In fact, all these purposes can either be good or bad. They are good because they provide criteria for administrators to decide who should re-enroll in advanced education or for administrators to motivate competitive-oriented students to study. Nevertheless, a lot of side-effects may be overlooked if GPA is used as the mere criterion to judge a student's performance. These unintended side-effects of grades may result in a) distortion of teaching b) affecting student attitude and behavior or c) affecting the existing social order of a society.

Distortion of teaching can appear in several forms like imposing instructional constraints on instructors to vary their course contents, or setting up accomplishment standards where course work can be rated easily and mechanically, or stifling students to criticize old ideas by following the instructor's guidelines.

Student's attitude and behavior can also be adversely affected by grades. Grades can lead to cheating in examination, anxiety among students, inhibition of student cooperation or collaboration, and discouragement of advance studies.

Grades is said to have one effect of reordering or

maintaining the existing social order. However, people also argue that good grades also act as a mechanism for upward mobility in our society, this is especially true among the Asian minorities.

In this study, college grade point average is the only indicator used to measure college achievement. High-, average-, and low-achievers are classified according to their college graded point average. Those who have an average grade point average of 'A' are identified as high-achievers, a 'B' as the average-achievers and a 'C or below' as the low-achievers. Even though the classification is not arbitrary, the readers still perceive the limitations of using GPA as the only criterion for college achievement. And so readers should be careful about the generalizations made in here.

4. Aside from using Discriminant Analysis, which used to classify cases into different group memberships, the readers might want to try logistic regression. This is a more robust research tool when many of the independent variables are categorical in nature (that is, either ordered or dichotomous.) It is , by far, more robust than regular multiple regression analysis (McFadden, 1976; Press and others, 1978.)

Appendix

DEPENDENT VARIABLE

College GPA

with A average, B average, C average, C- or D average and D- or F average

(recode and reorder 3,4,5=1; 2=2; 1=3)

INDEPENDENT VARIABLES

Individual Demographic Attributes:

Ethnic group

(1=White, 0=non-white)

(1=Chinese, 0=non-chinese) etc. dummy coded

Number of Semesters

(0 to 9 or more)

Marital status

(1=single, 2=married or divorced)

Sex

(1=female, 2=male)

Age (raw scores)

Background variables:

Residence History

(less than 5 years to more than 3 generations)

Precollege Academic Preparation:

pre-college schooling

(1=elementary or less, to 6=4-year college or higher)

eligible to enter UC or CSU after high school graduation

(1=yes, 0=no) dummy coded

high school track

(1=college pre track, 0=others) dummy coded

high school GPA

(1=below 2.00 to 5=2.50-4.0)

Family background:

father/mother's formal education

(1=elementary or less, to 6=4-yr college or higher)

total household income in 1988

(1=nothing, to 9=$60,000) the mid point of the interval will be used for each categorical level

Academic Variables

Paid hours work per week

(1=none, to 6=40 or more) the mid-point of the interval will be used for each categorical level

Fellowships, grants scholarships awarded
(1=nothing, to 10=more than $8000);
also recoded into (1=1) (2 thru 10=2)
the mid-point of the interval will be used for each categorical level

Initial Goal Commitment (Expected final degree objective)
(1=certificate, to 4=master or higher) recode into dummy variables

Institutional Goal Commitment(Plan to Transfer)
(1=not planning to , 2=planning to) recode into dummy variables

Academic Involvement
frequency of semester period involved in non-class contacts with faculty about class material
(1=never, to 4=more than 5 times)
studied course materials with other students
(1=never, to 4=more than 5 times)
participated in class discussions
(1=never, to 4=more than 5 times)
read materials other than those assigned for courses.
(1=never, to 4=more than 5 times)

Study Habits
"used the library for study", and "used the library for class assignment
(1=never, to 4=more than 5 times)

Participation in Extracurricular Activities
voluntary "participated in an athletic program" "participated in music or theater programs" and "participated in student government, clubs, activities"
(1=never, to 4=more than 5 times).

Changing Majors
recoded into (3=1, 4=2, 5=3)

CONTROL VARIABLES
Ethnic background
Native Language (also recoded into dummy code with 1=English speaking 0=non-English speaking)

Footnotes:

1. This refers to age, secondary school performance, choice of this university, highest academic degree expected, perceived need for academic remedy, parents' income, ACT composite score, father's education, mother's education, credit hours earned, grade point average, perceived likelihood of failing one or more courses, perceived likelihood of joining a social fraternity, sorority, or club, racial groups, college majors.

2. This includes either academic achievement or academic persistence.

3. Anderson tries to modify Lewin's Field Theory to identify the forces that produce either academic achievement and persistence or academic failure and attrition. He reasons that once the forces (both negative and positive) have been identified, it is possible to discover the key to increase the driving forces or to decrease the restraining forces in order to achieve a desired change. Spady, however, developed an interactional model which emphasis the harmonious interaction between personal attributes (interests, attitudes, dispositions) and environmental influences (courses, family, peers, institutions), which is considered important to the student's retention. Rootman, similar to Spady, developed an interaction theory which explained voluntary withdrawal is related to unsuccessful integration between individual and college environment. Withdrawal is seen as one of the mechanisms to cope with strains.

4. Based on the theoretical framework and factor loadings for Q.38-47, new variables are constructed such as academic participation, study habits, and extracurricular activities. Q.53-55 for Barriers of student progress.

5. U Statistic or Wilks' lambda Statistic is "a multivariate measure of group differences over several discriminating variables" (Klecka, 1984:38). Since U statistic is an inverse statistic, a zero means high discrimination and the group centroids are greatly separated and distinct. But if Wilks' lambda equals one, the group centroids are all equal. During the stepwise discriminant analysis, we usually select the Wilks' lambda which has the smallest lambda.

$$\Lambda = \prod_{i=k+1} 1/1+\lambda i$$

k refers to the numbers of functions already derived. refers to the multiplication of functions derived.

6. Canonical correlation $r_i = \lambda i / 1 + \lambda i$ where λi is the eigenvalue.

The standardized canonical discriminant function coefficients represent the relative contribution of certain variable on the calculating of a discriminant score. The larger the standardized canonical coefficient, the greater the contribution. Since the coefficient account for the simultaneous contribution of other variables, it is likely that the standardized coefficient of a variable will be affected by other variables which share the same discriminating information. (Kelck, 1984:33)

The total structure coefficients tell "how variable contributes to discrimination along that dimension" (Kelck,1984:43). It indicates how closely or similar the relation between a discriminating variable and a canonical discriminant function. If the coefficient approaches zero, it means that the two have little in common or else we can name that function based on that large coefficient variables, usually a coefficient of less than 0.4 is not considered. If we want to examine how a function and a variable related within a group , we can look at the pooled within group structure coefficient.

7. "Group centroids are the mean discriminant scores for each group on the respective functions. The centroids summarizes the group locations in the space defined by the discriminant functions." (SPSS, 1982)

BIBLIOGRAPHY

Aleamoni, L. M., and Oboler, L. (1978). ACT versus SAT in Predicting First Semester GPA. Educational and Psychological Measurement, 38:393-399.

Astin, A. W. (1982). Minorities in American Higher Education. San Francisco: Jossey-Bass.

Astin, A. W. (1973b). Student Persistence: Some stay, Some don't--Why? College & University, 48:298-306.

Astin, A. W. (1971). Predicting Academic Performance in College: Selectivity Data for 2300 American Colleges. The Free Press, New York. 1971.

Astin, H. S. & Cross, P. H. (1979). Factors Affecting Black Students' Persistence in College.

Austin, Thomas L., and others. (1988). Class Scheduling and Academic Achievement in a Non-Traditional Graduate Program. Innovative Higher Education, 12(2): 8-90 Spr-Sum.

Bagasao, Paula YLdefonza. (1983). Factors Related to Science-Career-Planning among Asian and Pacific American College-Bound High School Seniors. University of California, Los Angeles. PH.D. Dissertation.

Blustein, David L. et al. (1986). Identifying Predictors of Academic Performance of Community College Students. Journal of College Student Personnel. May 27(3): 242-249.

Cheng, Lucie. (1986). The New Asian Immigrants in California Department of Sociology and Asian American Studies Center. University of California, Los Angeles.

Chickering, A. (1974). Commuting versus Resident Students: Overviewing Educational Inequities of Living off Campus. San Francisco, Jossey Bass.

Chissom, B. S. and Lanier, D. (1975). Prediction of First Quarter Freshman GPA Using SAT Scores and High School Grades. Educational and Psychological Measurement 35: 461-63.

Clark, Burton. (1960). The 'Cooling Out' Function in Higher Education. American Journal of Sociology, 65(6):569-576 in Arthur M. Cohen and Leslie Purdy, College Curriculum and Instruction, 1971. Simon and Schuste, N.Y.: A Selected Academic Readings Book.

Clark, Reignald M. (1983). Family Life and School Achievement: Why Poor Black Children Succeed or Fail. Chicago: University of Chicago Press.

Crouse, James and Trusheim, Dale. (1988). The Case Against the SAT. The University of Chicago Press/Chicago and London.

Cummins, Jim. (1983). Language Proficiency and Academic Achievement 108-129 in Oller,John W.,Jr. (ed.) Issues in Language Testing Research. Rowley, Ma. Newbury House.

Cummins, Jim. (1986). Empowering Minority Students: A Framework for Intervention. Harvard Educational Review 56(1):18-35.

Doran, Neil J. (1987). Male-Female Differences in SAT-Verbal Ability Among Students of High SAT-Mathematical Ability. Journal of Educational Measurement, (Spring)24(1):65-71.

Erickson, F. (1984). School Literacy,reasoning, and civility: An anthropologist's perspective. Review of Educational Research 54(4):525-544.

Erickson, F. (1987). Transformation and School Success: The Politics and Culture of Educational Achievement. Anthropology and Education Quarterly, 18(4): 335-356.

Giroux, H. (1983). Theories of Reproduction and Resistance in the New Sociology of Education: A Critical Analysis. Harvard Educational Review 53(3): 257-93.

Goldman, R.D. and Richards, Regina. (1974). The SAT Prediction of Grades for Mexican-American Versus Anglo-American Students At University of California, Riverside. Journal of Educational Measurement, 11 (summer 2): 129-35.

Goldman, R. D., and Hewitt, B. N. (1976). Predicting the Success of Black, Chicano, Oriental, and White College Students. Journal of Educational Measurement 13: 107-117.

Goldman, Susan R. and Trueba, Henry T. (1987 Ed.). Becoming Literate in English As A Second Language. U. C. Santa Barbara. Ablex Publisher, Norwood, N.J.

Gordon, Harold W. (1988). Specialized Cognitive Function and School Achievement. Developmental Neuropsychology; 4(3): 239-257.

Gordon, Milton M. (1964). Assimilation in American Life. New York: Oxford University Press.

Gordon, Virginia N. (1984). The Undecided College Student: An Academic and Career Advising Challenge. Charles C. Thomas Publisher.

Hirschman, Charles and Wong, Morrison G. (1986). The Extraordinary Educational Attainment of Asian Americans: A Search For Historical Evidence and Explanations. Social Forces Sep. 65(1):1-27.

Hsia, Jayjia. (1988). Asian Americans in Higher Education and at Work. Hillsdale,New Jersey:Lawerence Eribaum.

Hsia, Jayjia. (1987-88). Asian Americans Fight the Myth of the Super Student. Educational Record, 68(4/1): 94-97. Fall-Win.

Hsia, Jayjia. (1987). Asian American Students: Ability, Achievement and Access to Higher Education. Paper read at American Educational Research Association, Washington D.C. April.

Hsia, Jayjia. (March 31--April 4, 1985). The Silent Minority: Asian Americans in Education and Work. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL, .

Hsia, Jayjia. (1983). Cognitive Assessment of Asian Americans in Chu-Chang, Mae (ed. & introd.) Rodriguez, Victor (ed. & pref.) Asian and Pacific American Perspectives in Bilingual Education: Comparative Research. New York: Teacher College, Columbia University.

Kitano, Harry H. L. and Kikumura, Akemi. (1980). The Japanese American Family in Endo,Russell;Stanley Sue and Nathaniel N. Wagner, eds. Asian Americans: Social and Psychological Perspectives, Vol.II Science and Behavior books.

Kitano, Harry L. and Sue, Stanley. (1973). The Model Minorities. Journal of Social Issues, 21:1-9.

Kitano, Harry L. (1969). Japanese Americans: The Evolution of a Subculture. Prentice-Hall Inc., Englewood Cliffs, New Jersey.

Klecka, William R. (1980). Discriminant Analysis. A Sage University Paper.

Lareau, Annette. (April,1987). Social Class Differences in Family school Relationships:The Importance of Cultural Capital, Sociology of Education 60: 73-85.

Larson, L. R. and Scontrino, M. P. (1976). The Consistency of High School Grade Point Average and of the Verbal and Mathematical Portions of the Scholastic Aptitude Test of the College Entrance Examination Board, as Predictors of College Performance: An Eight-Year study. Educational and Psychological Measurement, 36: 439-43.

McCornack, Robert. L. (1983). Bias in the Validity of Predicted College Grades in Four Ethnic Minority Groups. Educational and Psychological Measurement, 43(2): 517-522.

McFadden, Daniel. (1976). A Comment on Discriminant Analysis "Versus" Logit Analysis. Annals of Economic and Social Measurement, 5(4): 511-523.

McDonald, R. T. and R. S. Gawkoski. (1979). Predictive Value of SAT Scores and High School Achievement for Success in a College Honors Program, Educational and Psychological Measurement, 39: 411-414.

Monzon, Reynaldo Inocente. (1984). The Effects of the Family Environment on the Academic Performance of Pilipino American College Students. Master Thesis, San Diego State University.

Nader, Ralph and Nairn, Allan. (1980). The Reign of ETS.

Ogbu, John U. (1978). Minority Education and Caste: The American System in Cross-cultural Perspective. New York: Academic Press.

Ogbu, John U. (1981). Origins of Human Competence: A Cultural-Ecological Perspective. Child Development, 52(2): 413-429 .

Ogbu, John U. (1982). Cultural Discontinuities and Schooling. Anthropology and Education Quarterly, 13(4): 290-307.

Ogbu, John U. (1983). Minority Status and Schooling in Plural Societies. Comparative Education Review, 27(2): 168-190.

Ogbu, John U. (1987a). Variability in Minority Responses to Schooling: Nonimmigrants vs. Immigrants in Interpretive Ethnography of Education: At Home and Abroad. George Spindler and Louise Spindler, eds. pp.255-278. Hillsdale, N.J.: Erlbaum.

Ogbu, John U. (1987b). Variability in Minority School Performance: A Problem in Search of an Explanation. Anthropology and Education Quarterly 18(4): 312-334.

Ogbu, John U. and Matute-Bianchi, M. E. (1986). Understanding Sociocultural Factors:Knowledge,Identity and School Adjustment in Beyond Language: Social and Cultural Factors in Schooling Language Minority Students. (pp.73-142). Sacramento, CA: Bilingual Education Office, California State. Department of Education.

Pantages, Timonthy J. (1978). Studies of College Attrition: 1950-75. Review of Educational Research, 48(1): 49-105.

Pascarella, Ernest T., Duby, Paul B., Vernon, A. M., and Sue P. Rasher (1981). Pre-enrollment Variables and Academic Performance as Predictors of Freshman Year Persistence, Early Withdrawal and Stopout Behavior in an Urban, Nonresidential University. Research in Higher Education, 15(4): 329-349.

Pascarella, Ernest T.; Duby, P. B.; and Inverson, B. K. (1983). A Test and Reconceptualization of A Theoretical Model of College Withdrawal in a Commuter Institution Setting. Sociology of Education, 56(April): 88-100.

Passons, W. R. (1967). Predictive Validities of the ACT, SAT, and High School Grades for First Semester GPA and Freshman Courses. Educational and Psychological Measurement 27: 1143-44.

Press, S. James and Wilson, Sandra. (1978). Choosing Between Logistic Regression and Discriminant Analysis. Journal of the American Statistical Association, Dec. 73(364): 699-705.

Shultz, J. J.; Florıao, S.; and Erickson, F. (1982) Where's The Floor? Aspects of the Cultural Organization of Social Relationships in Communication at Home and in School. In Perry Gilmore and Allan A. Glatthorn, Children In And Out of School:Ethnography and Education. Center for Applied Linguistics, Washington, D. C.

Sue, Stanley. (1980). Psychological Theory and Implications for Asian American in Endo, Russell; Stanley Sue and Nathaniel N. Wagner, eds. Asian Americans: Social and Psychological Perspectives, Vol.II. Science and Behavior books.

Sue, Stanley. (1990). Asian American Educational Achievements: A Phenomenon in Search of an Explanation. unpublished article, Univ. of California, Los Angeles,

Sue, D. W., and Sue, S. (1972). Ethnic Minorities: Resistance to being Researched. Professional Psychology 3: 11-17.

Sue, Stanley; Abe, Jennifer. (1988). Predictors of Academic Achievement among Asian American and White Students. College Board Report No. 88-11. College Entrance Examination Board, New York, N. Y.

Sue, Stanley and Kitano, Harry L. (1973). Stereotypes as a Measure of Success. Journal of Social Issues, 29(2): 83-98.

Sue, Stanley; Sue, Derald Wing, and Sue, David W. (1975). Asian Americans as a Minority Group. American Psychologist, 30: 906-910.

Sue, S. and Zane, N. W. S. (1985). Academic Achievement and Socioemotional Adjustment Among Chinese University Students. Journal of Counseling Psychology 32(4): 570-79.

Tatsuoka, Maurice M. (1971). Multivariate Analysis: Techniques for Educational and Psychological Research. John Wiley & Sons, Inc. New York.

Tatsuoka, Maurice M. (1970). Discriminant Analysis: Study of Group Differences. Institute for Personality and Ability Testing. 1602-04 Coronado Drive, Champaign, Illinois 61820.

Tinto, Vincent (1987). Leaving College: Rethinking the Causes and Cures of Student Attrition. The University of Chicago Press. Chicago and London.

Tinto, Vincent (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. Review of Educational Research, 45(1): 89-125.

Tinto, Vincent (1985). Dropping out and other Forms of Withdrawal from College in Noel et al. Increasing Student Retention. Jossey-Bass, San Francisco.

Tracey, Terence J. and William E. Sedlacek. (1985). The Relationship of Noncognitive Variables to Academic Success: A Longitudinal Comparison by Race. Journal of College Student Personnel, 26: 405-410.

Trueba, Henry T. (1988). Culturally Based Explanations of Minority Students' Academic Achievement. Anthropology and Education Quarterly, Sep. 19(3):270-287.

Trueba, Henry T. (1989). Raising Silent Voices:Educating the Linguistic Minorities for the 21st Century. Newbury House.

Trueba, Henry. (1987 ed.) Success or Failure?: Learning and the Language Minority Student. New York: Newbury House/Harper & Row.

Vernon,Philip E. (1982). The Abilities and Achievements of Orientals in North America, New York: Academic Press.

Weitzman, R. A. (1982). The Prediction of College Achievement by the Scholastic Aptitude Test and the High School Record. Journal of Educational Measurement 19(3): 179-91.

Willis, Paul (1977). Learning to Labor:How Working Class Kids Get Working Class Jobs. Columbia Univ. Press.

Yamagata-Noji, Audrey Ayako. (1987). Academic Achievement of Japanese Americans. PH.D dissertation. University of California, Los Angeles.